ACC.12
61st Annual Scientific Session & Expo
ACC-i2 with TCT innovation in intervention

E1399
JACC March 27, 2012
Volume 59, Issue 13

Chronic CAD/Stable Ischemic Heart Disease

EVALUATION OF THE ASSOCIATION OF THE F2R IVS-14A/T PAR-1 POLYMORPHISM WITH STENT THROMBOSIS AND SUBSEQUENT CARDIOVASCULAR EVENTS IN A COHORT OF CORONARY ARTERY DISEASE PATIENTS

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Gene and Drug Impacts on CAD
Abstract Category: 1. Chronic CAD/Stable Ischemic Heart Disease: Basic
Presentation Number: 1196-233

Authors: *Donald Lynch, Jessica Delaney, Ehab Kasasbeh, Dan Roden, John Cleator, Vanderbilt Heart and Vascular Institute, Nashville, TN, USA*

Background: The protease-activated receptor 1 (PAR1), encoded by F2R, is found on the surfaces of platelets and vascular endothelial cells. Thrombin potently activates PAR1 (and PAR4) on human platelets. Phase III studies of PAR-1 antagonists administered to patients managed with dual anti-platelet therapy have failed to show a benefit in prevention of subsequent coronary events. The intronic single nucleotide polymorphism (SNP), F2R IVS-14A/T (rs168753) has been shown to be associated with platelet receptor density and functional response of PAR-1. The aim of this study was to evaluate the effect of rs168753 on the occurrence of subsequent stent thrombosis and cardiovascular outcome.

Methods: Using BioVU, the Vanderbilt DNA repository linked to the electronic health record (EHR), we identified individuals who had an MI or underwent PCI with stent placement, using a combination of billing codes, laboratory values, medication orders, and natural language processing derived from EMR data. Cases had a recurrent cardiovascular event, defined as a composite outcome of MI, revascularization, stroke, or all-cause mortality (n=224). Controls were observed for at least one year without a second cardiovascular event (n=468).

Results: The native A/A genotype was found among 456 patients (56%); while 150 patients (18%) contained one allele with the A to T transversion (A/T) and 19 (2.3%) were homozygous (TT). Using an additive Cox regression model, There was no significant difference for the primary outcome between cases and controls (HR 1.20, 95% CI 0.90-1.60, p = 0.21). This relationship persisted (HR 1.19, 95% CI 0.89-1.59, p=0.23) when our model was adjusted for age, race, gender, bmi and smoking status. In addition, SNP rs168753 was not associated with the secondary endpoint of stent thrombosis (n=11) (HR 2.25, 95% CI 0.31-16.62, p=0.43).

Conclusions: In this population, our data do not support an association between rs168753 and recurrent cardiac events, including stent thrombosis.